

Pediatric Obsessive-Compulsive Disorder

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Case Study

A 7-year-old second-grader was brought to her pediatrician after an abrupt onset of abnormal behavior that began on a family trip to the zoo. She refused to touch or hold anything with her hands (for example, the walkway railings) and repeatedly requested to wash her hands at each rest room she passed throughout the day. The contamination fears increased over the next 2 days, until she was unable to clean herself or use the toilet without assistance. The washing of her hands became a ritual that involved counting to 10 for each finger she cleaned. She would cry and seem distressed as she washed, yet refused to leave the sink until the ritual was completed. By the time medical attention was sought, the fears and rituals had progressed to the point that her father had turned off the water to all but 1 of the sinks in the house and her mother had to brush her child's teeth and bathe her at least twice each day. She also had developed fears that her food might be contaminated and refused to eat all but a few specific "safe" foods.

Epidemiology

Obsessive-compulsive disorder (OCD) was once considered rare in children. Janet¹ was the first to describe a case of pediatric OCD in 1903. Several decades later Kanner² published the first extensive review of the disorder, observing that children with OCD were socially isolated and their families overly involved in the compulsive rituals. A recent comparison of several epidemiological studies have shown that by late adolescence OCD has an average lifetime prevalence of 2% to 3%. An earlier onset in boys than girls was noted

with a peak around puberty and then again in early adulthood. Although OCD is relatively persistent in adulthood, a comprehensive review of the literature has shown a complete remission rate of childhood-onset OCD of 10% to 50% by late adolescence.³

There are several patterns of comorbidity that have been associated in children with OCD. In a study of 70 children diagnosed as having OCD, only 26% of the subjects had OCD as their only diagnosis.⁴ Tic disorders (30%), major depression (26%), and specific developmental disorders (24%) were the most common comorbidities found. Other diagnoses included simple phobias, overanxious disorder, adjustment disorder with depressed mood, oppositional disorder, and attention-deficit disorder, all with rates between 10% and 17%.⁴

The role of genetic factors in OCD has been evaluated in several twin and family studies. Segregation studies have tested for possible models of genetic inheritance in diseases that show familial aggregation like OCD. By using a regressive logistic model, evidence for a gene effect that fit best with autosomal dominant mode of inheritance was found in a sample of 107 families designated from an OCD proband.⁵ However, such studies have limited ability to distinguish environmental from genetic familial influences. Perhaps identification of a specific gene or genes responsible for OCD would be more helpful to identify those at increased risk of disease.

Diagnosis

Although childhood-onset OCD is not difficult to recognize, patients may not readily describe their symptoms and clinicians may fail to consider the diagnosis. Children tend to see their symptoms as nonsensical and "crazy,"⁶ and

thus may hide them as long as possible. Compulsive rituals may begin so gradually that parents compensate for the behaviors by serving "safe" foods or tolerating increasingly frequent and prolonged bathroom breaks, thus allowing the child to continue functioning with an illness that would be debilitating to an unassisted adult. Washing, grooming, checking rituals, and preoccupation with disease, danger, and doubt are among the most common presenting symptoms in childhood-onset OCD (TABLE).⁴ Months may pass before the child is brought for evaluation, as parents often seek care only when the behaviors significantly disrupt the structure of the child's or family's life.⁷

Children with OCD may come to medical attention because of the behavioral or physical consequences of their ritualistic behaviors. A dermatologist might be asked to evaluate a child with eczematous changes from repeated hand washing or focal lesions caused by compulsive skin picking. Dentists may discover gum lacerations and excessive bleeding caused by repetitive and frequent teeth cleaning. A pediatrician might be consulted for encopresis or secondary enuresis when a child refuses to use the bathroom because of obsessional thoughts of contamination. A family physician may be consulted for depression or generalized anxiety, which arise from upsetting thoughts and behaviors.

When a diagnosis of OCD is suspected, a complete history of the na-

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Contempo Updates Section Editor: Stephen J. Lurie, MD, PhD, Senior Editor.

ture and extent of the symptoms should be elicited. The child should be asked to describe in his/her own words the urges or worries that accompany the rituals, and to provide details of how the symptoms are interfering in his/her life. Special care should be taken to determine patterns of avoidance since these are a major source of interference for some children. It is also important to obtain information from the parents, family members, and teachers to identify the context and severity of the symptoms.⁸

It is particularly important to consider the patient's developmental stage when evaluating a child or adolescent with a neuropsychiatric illness. Developmentally appropriate ritualized behaviors must be distinguished from mild obsessive-compulsive symptoms. In general, developmental rituals cause little disruption to the child's life and provide some comfort. Examples might include lining up stuffed animals as part of a bedtime ritual or wearing "lucky" socks for an important game. Compulsive rituals, on the other hand, are associated with distress and interference; for example, arranging and rearranging a stack of books until the child gets it "just right" or insisting that his/her socks must be changed because of an invisible speck of dirt.⁹ A study of children aged 8 to 13 years found that although there were fewer compulsive behaviors in the older age group, these children had significantly more anxiety associated with their compulsive behaviors.¹⁰ To better define normal developmental behaviors, a study could be designed to evaluate children longitudinally comparing the extinction rates of compulsive behaviors in children with and without associated anxiety.

Structured tests have been developed recently to aid in the diagnosis and the assessment of severity of pediatric OCD and other anxiety disorders. The Multidimensional Anxiety Scale for Children¹¹ is useful for the assessment of anxiety in 8- to 19-year-olds. The test provides an overall severity score, as well as subscale descriptions and index scores that can help to classify the

nature of the anxiety disorder. The Yale-Brown Obsessive Compulsive Scale¹² is a clinician-administered instrument designed to establish the diagnosis of OCD in children by ascertaining current and past obsessions and compulsions. The severity scale provides a validated means of assessing and monitoring the child's progress during treatment.

Treatment

The improved understanding of the neurobiology of OCD has resulted in an increased interest in the possible etiologies of this disorder and the development of more effective treatments. There is extensive evidence supporting a neuro-anatomic model of OCD based on defective frontal-striatal circuitry in conjunction with neurochemical abnormalities.¹³ Cognitive-behavioral therapy and pharmacologic management have been shown to have direct effects on these abnormalities and to have the best outcomes for patients with OCD.

Exposure and response prevention is a cognitive-behavioral treatment that has consistently been shown to be effective in the treatment of OCD. In exposure and response prevention, obsessions are identified as intrusive and unwanted thoughts or images that cause anxiety and distress, and compulsions as behaviors or actions that serve to reduce anxiety.¹⁴ Therapy is instituted in a stepwise fashion with progressive exposure to the triggering fear or obsession. The child becomes slowly desensitized to this anxiety-provoking stimulus and eventually is able to tolerate it without distress or performing a ritual. For exposure and response prevention to be successful, a child or adolescent must be able to comprehend that a ritualistic behavior stems from a triggering fear or worry. The child must also be able to understand abstract concepts and be willing to experience temporary anxiety in exchange for future relief.¹⁵ This is often not developmentally possible for young children.

The first drug trials for OCD in children in the 1980s demonstrated clomipramine hydrochloride to be efficacious.¹⁶ Subsequent research has shown

Table. Five Most Common Compulsions and Obsessions in Children and Adolescents With Severe Obsessive-Compulsive Disorder*

Compulsions
Excessive or ritualized hand washing, showering, bathing, tooth brushing, or grooming
Repeating by going in and out of door or up and down from chair
Checking doors, locks, stove, homework
Rituals to remove contact with contaminants
Ritual touching or a pattern of tapping
Obsessions
Concern with dirt, germs, or environmental toxins
Concern that something terrible will happen such as a fire, death, or illness
Symmetry, order, or exactness
Scrupulosity (religious obsessions)
Lucky/unlucky numbers
Concern or disgust with bodily wastes or secretions

*Lucky/unlucky numbers and concern or disgust with bodily wastes or secretions were tied for the No. 5 position in the Obsessions list. Table adapted from *Archives of General Psychiatry* (1989;46:337).

that the selective serotonin reuptake inhibitors are equally effective; however, they have fewer adverse effects than clomipramine, and are thus the current drugs of choice for childhood-onset OCD.¹⁷ The choice of a specific selective serotonin reuptake inhibitor should be based on its adverse effect profile, the patient's medical history, and concomitant medications. The response to these medications is slow in onset, and a trial of 10 to 12 weeks at therapeutic dosage is necessary to determine efficacy of the treatment.¹⁸

Poststreptococcal Childhood-Onset OCD

Poststreptococcal autoimmunity has been postulated as an etiology for a subset of children with OCD.¹⁹ This hypothesis arose from observations of patients with Sydenham chorea, the neurologic manifestation of rheumatic fever. More than 60% of children with Sydenham chorea had concomitant onset of obsessive-compulsive symptoms.²⁰ Furthermore, some children with OCD were noted to have symptom onset or exacerbations following group A β -hemolytic streptococcal infections. This syndrome has been designated as pediatric autoimmune neuropsychiatric disorders associated with streptococcal infection (PANDAS). Structural magnetic reso-

nance imaging studies have also delineated this syndrome by demonstrating an increase in the average size of the caudate, putamen, and globus pallidus in these children when compared with healthy control subjects, a finding similar to that previously found in patients with Sydenham chorea.²¹

These children are thought to mount a postinfectious systemic immunologic response to group A β -hemolytic streptococci. The exact nature of this response is not completely understood, but it may affect neuronal function in the basal ganglia in genetically susceptible children.²² Studies are un-

der way to better define immunologic markers and determine how the central nervous system can be affected by responses to peripheral infections. Research is also being conducted to elucidate the pathophysiology of the neuropsychiatric symptoms, as well as to develop new treatment strategies. One promising approach is the use of immunomodulatory therapy, such as plasmapheresis and intravenous immunoglobulin. A placebo-controlled trial demonstrated that both therapies were effective in reducing the severity of the neuropsychiatric symptoms of children with OCD.²³

Summary

Obsessive-compulsive disorder is a chronic disabling condition that often has its onset during childhood and adolescence. The availability of well-studied treatments showing proven benefits compels the practitioner to be able to recognize this neuropsychiatric disorder and be aware of the therapeutic options available for these patients. Considerable strides have been made in the diagnosis and treatment of this troublesome disorder, but further research is needed to better define the etiology and pathophysiology of childhood-onset OCD.

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